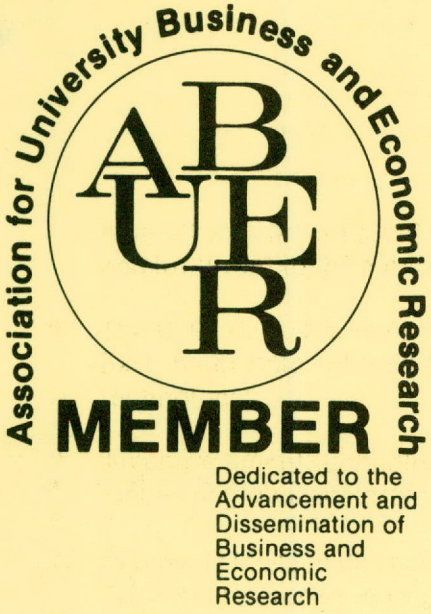
MIDWESTERN BUSINESS AND ECONOMIC REVIEW

No. 1 Fall 1983

In this issue

Bureau of Business and Government Research
Midwestern State University
Wichita Falls, Texas


Association for University Business and Economic Research
ABUER
MEMBER
Dedicated to the
Advancement and
Dissemination of
Business and
Economic
Research

MIDWESTERN BUSINESS AND ECONOMIC REVIEW

No.1 Fall 1983

In this issue

BUREAU OF BUSINESS AND GOVERNMENT RESEARCH
MIDWESTERN STATE UNIVERSITY
WICHITA FALLS, TEXAS

The Bureau of Business and Government Research is an integral part of Midwestern State University. The principal purposes of the Bureau are:

1. To provide assistance in research conducted by the faculty and students in the university.

2. To conduct and encourage research related to the local community.

3. To promote public understanding of contemporary economic, business, and government issues.

Additional copies of this publication are available, upon request, from the Bureau of Business and Government Research, Midwestern State University, Wichita Falls, Texas 76308.

Third-class postage paid in Wichita Falls, Texas 76308

FOREWORD

Yoshi Fukasawa, Director
Bureau of Business and Government Research
Midwestern State University

It is with great pleasure and pride that we present to you the first issue of the **Midwestern Business and Economic Review.** I hope you will find the reading enlightening and interesting.

Five articles are featured in this issue:

Drs. Louis J. Rodriguez and Michael A. Preda analyzed the economic impact of government agencies on the Wichita Falls SMSA. The study included 64 federal, state, county, municipal and other agencies in the area. The authors report that the expenditures by these government agencies, excluding Sheppard Air Force Base, accounted for approximately 21 percent of the total income generated in the Wichita Falls SMSA in 1981.

The second article by Professor Warren E. Moeller provides a framework for sound family financial planning. The author suggests that an overall plan should be developed to allow for providing necessities, to provide for emergencies and contingencies, as well as to achieve a systematic accumulation of an estate.

Dr. Mike Patterson examined the effect of widely publicized flat-rate personal income taxation on the distribution of tax burden. His study concluded that "the clear result of any flat-rate plan would be that the vast majority of taxpayers would pay more and the very wealthy would pay far less." Dr. Patterson also suggested a list of some unanswered questions regarding the flat-rate system.

The paper by Drs. Henry Van Geem and Robert L. Taylor helps us understand the consumer price index. The article explains the method used for the construction of the index and how to properly interpret the index.

The final article appearing in this issue discusses the nuclear energy agreement signed in 1975 by Brazil and the Federal Republic of Germany. Dr. Fred J. Backhaus examined complex economic and political considerations evolving around the agreement.

COMMUNITY ADVISORY COUNCIL

Bureau of Business and Government Research
Midwestern State University

The Community Advisory Council operates as an intermediary between the Bureau and the community. The Council advises the Bureau of the research projects and seminars of interest to the community and ways to improve the utility of the Bureau effort by the community.

MEMBERS

Mr. James Berzina
City Manager
City of Wichita Falls

Mr. Edwin B. Daniel
Executive Director
Nortex Regional Planning Commission

Ms. Sallie Ford
Vice President
Olney Savings Association

Mr. David Kimbell
President
Burk Royalty Co.

Mr. Mike Lawson
Executive Vice President
Board of Commerce and Industry

Mr. M. C. McGee
District Manager
Southwestern Bell Telephone Co.

Mr. Ernest Myers
Plant Manager
A. C. Spark Plug Division
General Motors

Mr. Joe Parker, Jr.
Assistant Vice-President
First National Bank of Byers

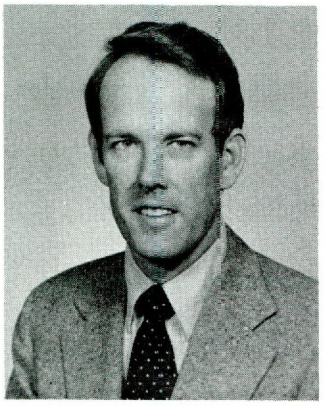
Mr. Gary Shorts
General Manager
Wichita Falls Times and Record News

Mr. Herb Smith
President
Herbert R. Smith, Inc.

Mr. Ikard Smith
President
McClurkans, Inc.

Mr. H. Cecil Streich
President
Gibson's Product, Inc.

Mr. David Wolverton
Chairman and Chief Executive Officer
First Wichita National Bank



DAVID WOLVERTON

David Wolverton

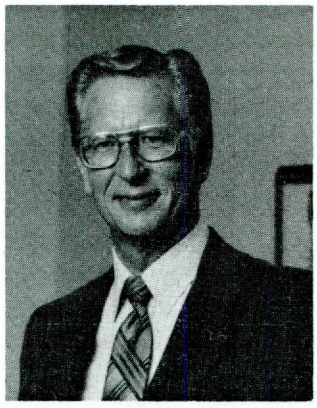
David Wolverton, Chairman of the Board and Chief Executive Officer of First Wichita National Bank of Wichita Falls, was born June 19, 1940, in the North Texas town of Vernon. He is married to Pat Perkins Wolverton, and they have three children.

Mr. Wolverton attended New Mexico Military Institute, and the University of Texas. He holds a Bachelor of Business Administration and Master of Business Administration, and is a Certified Public Accountant.

He entered the United States Army in 1963 and served until 1965. After he was discharged from the Army, he came to Wichita Falls, where he was employed by the accounting firm of Jarratt and Toombs until 1966, when he left to become associated with First Wichita National Bank.

During his seventeen years at the First Wichita National Bank, he has become highly visible to the public through numerous civic and service organizations. He served as a Board Member of the Boy's Club, The Citizen's Advisory Committee, Midtown Now Corporation, Midwestern State University Foundation, North Texas Oil & Gas Association, Texas Research League, Texas Council on Economic Education, Texas Board of Texas Independent College Fund, United Way of Greater Wichita Falls, Wichita Falls Board of Commerce and Industry, Wichita Falls Museum and Art Center, and the Wichita Falls General Hospital Foundation.

He is professionally associated with the Young President's organization, and his other community involvements are the Fain Memorial Presbyterian Church, the Wichita Falls Mavericks, and the Chili Appreciation Society International.



H. CECIL STREICH

H. Cecil Streich

H. Cecil Streich, President of the Streich Group of Gibsons Discount Centers, was born April 30, 1924. He is married to Patsy Ann Streich, and they have eight children. He resides in Iowa Park, Texas.

Mr. Streich attended Southern Methodist University, Texas A & M University, and The Citadel, Charleston, South Carolina.

In 1946, at the age of 22, Cecil Streich opened his first store in Wichita Falls with three employees selling wholesale drug sundries. Under his management, the business continued to expand and change in nature. This first store was opened to the public in 1959, and its name changed from Gibson Wholesale to Gibson's Discount Center. The company now has 10 stores in Texas and Oklahoma.

Contributions to the community have been an integral part of Cecil Streich's life. He has been an active member of the First Baptist Church of Wichita Falls. He is a former Director of the Wichita Falls Board of Commerce and Industry, a former member of the Executive Committee and Director of United Way of Wichita Falls, a former Vice President, member of the Executive Committee and Director of the Wichita Falls YMCA, a former Director of the Wichita Falls Community Mental Health/Mental Retardation Center, Director and former member of the Executive Committee of the Wichita General Hospital Foundation, member of the University Kiwanis Club, and Director and former Chairman of several committees of the Interfirst Bank of Wichita Falls.

One of the most notable contributions has been the annual Streich Family Lectureship on Private Enterprise at Midwestern State University.

ECONOMIC IMPACT OF GOVERNMENT AGENCIES ON THE WICHITA FALLS SMSA

Louis J. Rodriguez, President, Midwestern State University
Michael A. Preda, Associate Professor of Political Science, Midwestern State University

It is important to determine the origins of income in a given area. This knowledge will make possible determinations and estimates concerning economic situations, the relationship between labor and capital, economic stability and growth. For example, public sector activity is generally more immune to a business cycle than are many private sector operations. However, a danger of overdependence on one major public facility may exist. Should that facility be closed, the economic impact on an area can be very damaging. Compared to private sector operations, public agencies are not a source of property and agency income tax revenues to the local government.

While many Americans believe that federal, state and local governments take money out of local economies, they also contribute to those economies. Although taxes draw money out of the private sector, the infusion of money into the economy of a Standard Metropolitan Statistical Area (SMSA) is a matter worthy of examination. Overall government spending has increased in the past 20 years. In the United States, federal government spending, as a percentage of the gross national product (GNP), increased from 18.7 percent to 21.6 percent in the years 1959 - 1979.[1] Also as a percent of the GNP, state government spending expanded from 3.8 percent to 6.2 percent during that 20-year period. Local government spending rose by 0.4 percent from 4.4 to 4.8 percent during that same period of time. Thus, taking the nation as a whole, one finds that government spending, as a percent of the GNP, increased from 26.9 percent to 32.6 percent from 1959 to 1979.[2] Examination of one SMSA will provide the reader with more detailed information about how these national figures can be localized. A brief study of the individual federal, state, and local agencies and their contribution to the local economy will add to the base of information on economic impacts of governments on local economies.

The purpose of this article is to attempt to determine the percentage of income in the Wichita Falls SMSA which was generated by government agencies. The procedure will be to:

1) Briefly comment on the Wichita Falls SMSA;
2) Measure the economic impact of government agencies other than Sheppard Air Force Base on the SMSA;
3) Describe the economic impact of these various government agencies on the Wichita Falls SMSA in terms of overall income generated, percentage of the labor force, and indirect economic benefits to the area;
4) Briefly comment on the economic impact of Sheppard Air Force Base; and
5) Examine the indirect economic benefits on the local economy of these agencies.

WICHITA FALLS SMSA

The Wichita Falls SMSA consists of Wichita and Clay counties. In 1981, 94,201 people lived in the city of Wichita Falls and the county had a total population of 121,082. Clay County had 9,582 inhabitants during that year. The Wichita Falls SMSA thus covered 1,524 square miles and had a population of 130,664. During 1981 the labor force averaged 62,834 and total employment was 61,200. A major economic component of this SMSA is Sheppard Air Force Base (SAFB). In 1980, SAFB employed an average of 7,023 individuals and was responsible for generating $488,309,532 of expenditures in the SMSA.[3]

Table 1 represents the area of employment in the Wichita Falls SMSA by percentages for 1981. A key economic factor in the area is the oil industry (mining) which is subject to considerable fluctuations in the level of activity. As can be noted from the data, the highest category of employment is trade with 23.2 percent of the total labor force. Government employment ranks second with 20 percent, followed by manufacturing with 19.7 percent, and services with 16.5 percent. The figure for government employment is higher than the national average of 14 percent.[4] However, the figure is at the median level for metropolitan areas of this size.

Retail sales in the Wichita Falls SMSA amounted to $788 million in 1981. Of this total, 23.1 percent represented automotive outlay and 20.2 percent were expenditures for retail food.[5] Additionally, agricultural sales totaled approximately $25 million.[6] Table 2 shows the 1981 statistics of retail sales by store groups.

Aggregate estimated effective buying income (disposable personal income) for the Wichita Falls SMSA in 1981 amounted to $1,133,476,000.[7] The effective median income per household was $19,386.[8] During 1981 at the national level, disposable personal income was 68.9 percent of the GNP.[9] Assuming the same ratio for the Wichita Falls SMSA, the total dollar value of goods and services produced in the SMSA during 1981 was approximately $1,645,103,000.

ECONOMIC IMPACT OF GOVERNMENT AGENCIES

The research methodology used was to conduct a mail survey of all government agencies in the Wichita Falls SMSA. Since a sample survey would not provide sufficient information, it was necessary to construct a survey instrument (questionnaire - see Appendix 1) which would be easily read and completed. Stamped self-addressed envelopes were sent to the chief administrative officers, or to budget officers, where applicable, of the 64 federal, state, county, municipal, and special district offices located in Wichita and Clay counties (Appendix II).[10] Sheppard Air Force Base was excluded from this survey, because a previous study had been completed on the impact of Sheppard on the Wichita Falls SMSA. Follow-up telephone calls were made to encourage the return of completed questionnaires. Two months afterward the final results were tabulated, with 100 percent of the 64 questionnaires returned.

An effort was made through the questionnaire to determine the number of employees, amount of payroll expenditures for new homes, travel outlays, operating expenditures, and capital equipment purchases by these agencies during 1981 in the Wichita Falls SMSA. The expenditures for new homes were not made by the agencies, of course, but by their employees. The total purchase price was included, even though individuals financed their homes, since the total price was paid to the builder. Obviously, the purchases of new homes also contributed to the local economy.

The survey results reveal that these agencies employed 7,965 employees with a total payroll of $94,980,782. Estimates are that 18 new houses were built with a total purchase outlay of $1,117,252. Total operating expenditures amounted to $46,763,454 and construction outlays were $34,473,136. Also, expenditures of approximately $544,800 by dormitory residents at the local university were added. This resulted in a total of $177,879,424 being injected into the Wichita Falls SMSA by these 64 government agencies in the form of wages, salaries, services, new home purchases, and goods purchased in the SMSA. This amount, however, is not the final sum used in this analysis. A multiplier is also utilized.

The multiplier effect is a measure used by economists to determine the number of dollars of income generated in an area by each dollar of expenditure. Any income such as social security taxes, retirement deductions, mortgage payments to financial institutions outside the Wichita Falls SMSA, and travel and purchases outside the region are considered leakages from the Wichita Falls area income stream. If we assume the 51.3 percent of the expenditures of these agencies were spent outside of the area, the multiplier effect for the Wichita Falls SMSA would be 1.95.[11] The government agencies, excluding Sheppard Air Force Base, thus generated approximately $346,864,877 in total gross income or 21 percent of the total gross income for the Wichita Falls SMSA.[12]

A previous study, "Economic Impact of Sheppard Air Force Base on the Wichita Falls SMSA", was recently published.[13] The research concluded that in fiscal year 1980, Sheppard Air Force Base had an average of 7,023 employees. Average salaries for this group were $24,811 for officers, $11,580 for enlisted personnel and $17,905 for civilians. The total SAFB payroll was $115,079,409. The Base's operating expenditures were $1,852,300 for transportation and rentals, $3,186,300 for utilities, $21,396,400 for services, $23,727,086 for fuel and materials, $104,000 for claims, and $5,150,224 for construction and repairs. In summary, $55,427,026 was required to operate SAFB. Expenditures by the Base in the Wichita Falls area for these items totaled $12,799,962. Adding income of the retired Base employees in the area, expenditures by visitors to the

TABLE 1

Percentage of Employment by Category in the Wichita Falls SMSA Annual Average, 1981*

Category	1981
Mining	6.5
Construction	4.0
Manufacturing	19.7
Transportation, Communication, and Public Utilities	5.6
Trade	23.2
Finance, Insurance, and Real Estate	4.5
Service and Miscellaneous	16.5
Government	20.0
TOTAL	100.0

*Source: Roger McKinney, Director of Planning City of Wichita Falls, August 2, 1982

TABLE 2

1981 Retail Sales by Store Group ($000)

	Total Retail Sales	Food	Eating & Drinking	Gen. Mdse.	Furniture/Furnish. Appliances	Auto-Motive	Drug
Total Wichita Falls SMSA	788,476	159,609	58,594	102,508	42,246	182,448	16,908
Clay County	22,192	5,706	2,203	928	214	3,514	1,386
Wichita County	766,284	153,903	56,391	101,580	42,032	178,934	15,522
Wichita Falls	699,752	132,067	54,231	100,878	39,976	155,432	13,542
Total Suburban	88,724	27,542	4,363	1,630	2,270	27,016	3,?

Source: "1982 Survey of Buying Power," (Special Issue) Sales and Marketing Management, July 26, 1982, p. C-188

facility, commercial air transportation in and out of the Base as well as the purchase of new homes by SAFB personnel, the Base was responsible for total expenditures of $250,415,145 into the local economy. That study concluded that Sheppard Air Force Base was responsible for generating approximately 30 percent of the total dollar value of goods and services produced in fiscal year 1980. It would thus appear that approximately 51 percent of the total dollar value of goods and services produced by the Wichita Falls SMSA during the period covered by these two studies was generated by the public sector of the Wichita Falls SMSA economy.[14]

INDIRECT ECONOMIC EFFECTS OF GOVERNMENT AGENCIES

Direct economic effects can be quantified, but other benefits of the agencies in the Wichita Falls SMSA can be added to the list. Numerous federal, state, and county agencies provide services to the local community that provide direct benefits to their client groups. Examples are the U.S. Agricultural Stabilization and Conservation Office, and Soil Conservation Service, the National Oceanic and Atmospheric Administration, the Interior Department, Texas Employment Commission, and the Texas Commission for the Blind. The Social Security Administration facilitates the disbursement of checks to eligible beneficiaries as does the Texas Department of Human Resources. A large number of agencies serve as clearing houses for application for benefits. County agricultural agents advise farmers and ranchers on the use of fertilizers and pest controls which often increase crop production, and certainly have economic benefits.

Municipal governments provide public facilities for use by many members of the community. Parks and recreation centers, the Municipal Auditorium and the Municipal Airport are among the service centers available. The renovation of a former department store building in downtown Wichita Falls by the City resulted in the availability of space for use by civic groups and others in the Wichita Falls area. When more conventions are attracted to the city to use such facilities, the net income of the SMSA is expected to increase.

Midwestern State University and the area public schools provide facilities for meetings, sporting events, concerts, and other functions sponsored by off-campus groups. Special training courses provide enrollees with new skills which permit individuals to further their careers. Examples of these include Midwestern's Continuing Education Program, the services of the Texas Rehabilitation Commission and CETA programs operated under the auspices of the NORTEX Regional Planning Commission. When individuals acquire new skills which permit them to increase their income, or to gain employment if one has been unemployed, the net effect is a contribution to the area's economy.

Government employees pay local sales and property taxes and contribute to the funding base of the agencies for which they work. In addition, they assist in programs of civic and charitable organizations. Thus, government agencies have an impact on the economy of the Wichita Falls SMSA both directly and indirectly.

Indirect effects are often called "externalities" or "spillover". These are considered costs as well as benefits which affect persons or groups of people, other than those directly involved in the activity. Lee and Johnson indicate that:

> In the private sector, air and water pollution from industrial plants are externalities. The main concern of the private enterprise is making a profit, but part of the cost of production may be imposed upon persons living in the area. Residents of the area downstream and downwind of the plant pay a cost in terms of discomfort, poor health, and loss of water recreation opportunities. If a municipality downstream is required to treat water that has been polluted by the plant, the costs imposed are relatively easy to identify.[15]

A large number of governmental spending decisions include similar spillover effects. Spillover "effects of government programs may be more complex than those of business and industry, involving effects upon population migration, regional interdependencies, state and local government budgets, and the international balance of payments."[16]

A large portion of the difficulty in determining total costs of operating government agencies is the point that market prices are not entailed. While there are limitations, "the private market does provide some standard for measuring the value of goods and services by the prices set for these."[17] Yet, there is no question economic analysis in the government sector must impute the prices or values of programs. This practice is known as "shadow pricing."[18]

It is difficult to calculate the financial value of providing traffic safety, i.e. avoiding traffic deaths. However, much of the analysis should include not only the cost of government agencies, but also the benefits gained. Cost-benefits analysis of the public sector is a subject for further research.

CONCLUSION

Excluding Sheppard Air Force Base, government agencies were responsible for generating 21 percent of all economic activity in the Wichita Falls SMSA. This study revealed that one half of direct expenditures by these agencies was for wages and salaries. Government agencies generally have payroll payments as their largest spending item in non-defense agencies.

Based on the findings of this analysis and the findings of the Rodriguez and Krienke article, one can conclude that approximately 51 percent of economic activity in the Wichita Falls SMSA is generated by government operations. Most Americans think of Washington, D.C. and state capitols as government towns. Certainly, many Texans perceive Austin to be a "government town", but residents of the Wichita Falls area have not generally thought of their community to be so heavily dependent on the public sector. The area is generally billed as a center for ranching, farming, light industry, and oil and gas operations. The conclusions that such a large percentage of economic activity is government-based is an important fact in understanding economic activity in the Wichita Falls SMSA.

NOTES

1. *Congressional Quarterly Weekly Report,* Aug. 25, 1979, p. 1748.
2. Louis J. Rodriguez and Albert Krienke. "Economic Effect of a Military Base on a Small Metropolitan Area", *Texas Business Review,* May-June 1982, pp. 138-140.
3. Robert L. Lineberry, *Government in America: People, Politics and Policy.* Boston: Little, Brown and Co., 1980, p. 398.
4. "1982 Survey of Buying Power," *Sales and Marketing Management,* (Special issue), July 26, 1982, p. C-192.
5. Karen Chironi, *Community Profile of Wichita Falls, 1982,* (Wichita Falls: Board of Commerce and Industry, 1982) page 8.
6. "1982 Survey of Buying Power," *Sales and Marketing Management,* (Special Issue), July 26, 1982, p. C-188.
7. Ibid.
8. *Federal Reserve Bulletin,* Board of Governors of the Federal Reserve System. Washington, D.C., July, 1981, p. A-52-52.
9. Ibid.
10. See copy of questionnaire and list of agencies.
11. The Air Force Engineering and Services Division, Department of Environmental Protection Planning, Tyndall AFB, Florida provided the multiplier of 1.95.
12. Other areas may wish to measure the effect of government agencies on their local economy. Those interested in making such computations may find the following formula useful: $Y = k(a + bc + de + f + g + h + i)$, where Y = total amount of income generated by government agency, k = multiplier, a = total salary payments, b = percentage of non-wage operating expenditures spent in the area, c = total non-wage operating expenditures, d = total construction outlay, e = percentage of construction outlay spent in local economy, f = purchase of newly constructed homes by government employees, g = expenditures in area by students and others attached to a particular agency on a temporary basis, h = expenditures (including transportation) by visitors to these agencies, i = income of retired civilian and non-civilian government employees.
13. Louis J. Rodriguez and Albert Krienke. "Economic Effect of a Military Base on a Small Metropolitan Area", *Texas Business Review,* May-June, 1982, pp. 138-140.
14. The figure of 50 percent should be considered a close approximation.
15. Robert D. Lee, Jr. and Ronald W. Johnson. *Public Budgeting Systems.* Baltimore: University Park Press, 1973, P. 188.
16. Ibid., p. 189
17. Ibid.
18. Ibid.

Appendix I

_____
AGENCY NAME

Survey of Economic Activity in Fiscal Year 1981
for Wichita and Clay Counties

_____1. Total number of employees

_____2. Total salary (and wages) outlay for all employees

_____3. Total non-wage operating expenditures

_____4. Percent (%) of construction spending in Wichita and Clay counties (such as hiring local construction firms)

_____7. The number of **brand new** homes purchased by your employees in 1981 (newly constructed where the employee is the first owner)

_____8. What is the estimated dollar value of all of these homes?

Appendix II

List of Government Agencies
in the Wichita Falls SMSA

I. U.S. GOVERNMENT

A. **Agriculture Department**
1. Agricultural Stabilization & Conservation Office of Clay County
2. Agricultural Stabilization & Conservation County Committee
3. Farmer's Home Administration County Supervisor's Office
4. Soil Conservation Service of Henrietta and Iowa Park

B. **Commerce Department**
1. National Oceanic and Atmospheric Administration
2. National Weather Service of Wichita Falls Area

C. **Defense Department**
1. Army Recruiting Station
2. Army Reserve Headquarters
3. Marine Corps Recruiting
4. Navy Recruiting - Naval Reserve Center

D. **Federal Aviation Administration**
1. Federal Bureau of Investigation
2. HHS-Social Security Administration
3. Interior Department - Geological Survey
4. Internal Revenue Service

E. **Judicial Branch - U. S. Courts**
1. U. S. Probation Office
2. Clerk - U. S. District Court

F. **Justice Department**
1. U. S. Marshall

G. **Labor Department**
1. Wage and Hour Public Contracts Divisions
2. National Bank Examiners

H. **Post Offices**
1. Wichita Falls
2. Burkburnett
3. Henrietta
4. Iowa Park
5. Postal Inspector

I. **Veteran's Administration**

II. STATE GOVERNMENT

A. Alcoholic Beverage commission
B. Comptroller
C. Department of Health
D. Department of Highways & Public Transportation District Engineer
E. Parks and Wildlife
F. Public Safety Department
G. Railroad Commission
H. Red River Authority of Texas
I. Rodent and Predatory Animal Control Service Wildlife Damage Control
J. State Board of Insurance
K. State Board of Pardons and Paroles
L. State Commission for the Blind
M. Department of Human Resources
N. Texas A & M Agricultural Research Station
O. Texas Department of Labor and Standards
P. Texas Employment Commission
Q. Texas National Guard
R. Texas Rehabilitation Commission
S. Midwestern State University
T. Wichita Falls State Hospital

III. COUNTY GOVERNMENTS

A. Wichita
B. Clay

IV. CITY GOVERNMENTS

A. Wichita Falls, Texas
B. Burkburnett, Texas
C. Electra, Texas
D. Byers, Texas
E. Iowa Park, Texas
F. Henrietta, Texas

V. INTERGOVERNMENTAL AGENCIES

A. NORTEX Regional Planning Commission
B. Region IX Educational Service Center

VI. INDEPENDENT SCHOOL DISTRICTS

A. Wichita Falls
B. Burkburnett
C. Iowa Park
D. Henrietta
E. Electra
F. Bellevue
G. Midway
H. Byers
I. Petrolia
J. City View

FAMILY FINANCIAL PLANNING

Warren E. Moeller, Associate Professor of Business Administration,
Midwestern State University

Most estate planning concentrates on the disposition of an estate that has been accumulated through the years. Wealth accumulation should receive as much attention but seldom does. A total over-all financial plan should be developed by a family to allow for providing the necessities, to provide for emergencies and contingencies, as well as to develop a plan for a systematic accumulation of an estate.

The first step in the planning process is the development of an investment profile. Once an investment profile has been developed, guidelines can be established for an organized, well thought-out plan of wealth accumulation. The investment profile will include the answers to the following questions:

1. Has satisfactory housing been provided? A comfortable place to live is of primary importance. Consideration should be given to schools, access to public transportation, and other public services, trends in neighborhood growth, etc. Depending upon individual circumstances, the housing requirement may be satisifed either by lease or ownership.

2. Is there enough insurance? Insurance protection should be enough to provide for financial losses arising from premature death, poor health, accidents, disruption of income, casualty losses for property and liability claims. Insurance coverage will be provided by Social Security, group plans at one's place of employment, and insurance protection purchased by the individual insured.

3. How large is an emergency fund? An emergency fund equal to 3 to 6 months salary should be accumulated by every family. An emergency fund is money that is immediately available without penalty. Some examples are: checking accounts, most pass-book savings, cash (surrender) value in ordinary life insurance, collateral value of assets, money market funds. A combination of several of these will constitute the emergency fund for most families. The ideal situation would be to have one's emergency fund earning the maximum return while remaining liquid. An emergency fund is needed especially in the case of disability of the main breadwinner of the family. Since Social Security disability benefits have a waiting period of six months, as do most individual disability income insurance contracts, an emergency fund is essential to provide the family necessities during this waiting period.

4. What is your present income? How stable is it? What is your job security? Answers to these questions will determine the amount of risk to be taken as well as the relative sizes of the components of the financial plan.

5. How many years until retirement? Age? Financial goals change with age. As retirement approaches, safety of principal and a stable income have a higher priority than they do at earlier ages where an aggressive financial strategy may be more important.

6. How many dependents do you have and what are your financial obligations to them? Children may need to be educated; parents may be partially dependent upon you for financial help; provisions may be needed for a handicapped family member.

7. What is your tax bracket? The tax consequences should be examined for each investment alternative for the conservation of one's wealth.

Only after housing, insurance, and an emergency fund have been taken care of, should one consider the more risky types of investments.

All investors have four tasks in common. First, they must clearly determine their financial objective. This objective includes a combination of safety of principal, income and capital growth. Each part of the financial plan may emphasize a different objective. For example, the emergency fund should be more concerned with the safety of the principal rather than the income generated from it or the possibility of capital appreciation.

Next, investors will have to decide the types of investments and the proportions of each. That is, will the investments be savings accounts, IRA's, mutual funds, common stocks, bonds, real estate, etc? Then, once the types of investment vehicles are chosen, the job of deciding on the specific investments of each of the various types must be selected in order to assure that the objectives are attained.

Typically eight features should be analyzed in developing the specifics of a financial plan:

1. Safety of Principal. This feature does not require that the market price of an investment never shrink below its cost; it does, however, require a careful review of the industry trends and it further requires a diversification in the holdings. With diversification, gains should balance against losses for market fluctuations. Diversification of a portfolio will not give protection against purchasing power risk. Inflation erodes the purchasing power of all money. Even though bonds will mature at face value -- or may be called at a premium -- the purchasing power of the principal may have diminished as a result of inflation. This does not mean that one should not have some bonds in a balanced, diversified portfolio.

2. Liquidity and collateral value. Every investor needs minimum quick-resource funds available to meet emergencies. In addition to the cash and near cash that a family has, the ability to pledge assets for a loan also gives liquidity. Although cash is perfectly liquid, it is a sterile investment. NOW accounts, money market funds, and the new accounts at banks allow checks to be written while the account earns interest. Common stocks and other securities can be pledged as security for a loan but the collateral value will fluctuate with market conditions. In a volatile market, one's liquidity could fluctuate substantially.

3. Stability of Income. A specific financial plan for the systematic accumulation of wealth will rest firmly on the stability of one's income. If the investor's income is stable and secure, he is better able to take higher risks to try for the higher yields. With a stable and secure income, the emergency fund can be smaller and more can be allocated to wealth enhancement.

4. Effects of Taxation. There are two aspects to consider with regard to investment income. First, is the total amount of income generated by the investment and secondly, how much of that income is taxed away. Some types of investment income is fully taxed; some is only partially taxed. Some investment income may not be taxed at all under certain circumstances and other types of investments will have the taxes deferred until a later tax period when the returns may be more favorably treated.

   Some examples of each type of investment income includes:

   a) ordinary corporate dividend income is fully taxed,
   b) long term capital gains are partially taxed,
   c) interest income from municipal bonds is not subject to Federal Income Tax although it may be subject to state income tax,
   d) earnings on annuities, deferred annuities, IRA accounts and Keogh Plans have the taxes deferred until such time as the funds are withdrawn. These types of investments are used for retirement plans. It is argued that one will probably be in a lower marginal tax bracket during retirement and can benefit from the deferral of taxes.

5. Purchasing Power Stability. In times of inflation (deflation) it is important to consider the purchasing power changes in the dollar. The total yield, through current income and/or capital appreciation should more than keep up with inflation if one is to have a growing estate. Fixed income securities, i.e., bonds and preferred stocks, usually do not provide security against purchasing

power risk. Investments in Common Stocks in growth industries will, in most cases, keep up with inflation and provide for a growing estate.

6. Capital appreciation. The quickest way to build an estate is to acquire assets that increase in value over time. Historically, real estate, art, stamps, coins, and other collectibles as well as growth stocks have been vehicles for capital appreciation.

7. Freedom from Care. Some people prefer to leave the management of their investment to someone else. It takes a certian temperament to manage an investment portfolio - many do not have the time or expertise or simply the desire to manage for themselves. Mutual funds provide professional management for those who want it. Local investment counselors and most brokerage houses also have managed accounts.

8. Special Legal Requirements. Wealth accumulation (estate building) to provide for children, incompetents, and the aged may have special legal requirements to accomplish the desired objectives. Special care, together with competent legal counsel, is needed for these situations.

Depending upon one's investment profile and attitude toward risk, an investor decides which is best for him. Each part of his overall plan will emphasize one of these objectives over another.

During the years of estate building, capital appreciation is probably the major objective. While secure in his employment and during years of high earnings capacity, the investor can forego current investment income and be less concerned with safety of principal in exchange for those more risky investments that promise a large return in the form of price appreciation. Not only does one's estate grow but there may be certain tax advantages for this strategy at a time when the family is at peak earnings capacity.

FLAT-RATE PERSONAL INCOME TAX: HAS ITS TIME COME?

Mike C. Patterson, Assistant Professor of Business Administration,
Midwestern State University

Once again the cry for tax reform is being heard in Washington. The issues and the arguments have not really changed drastically for several years. Conservative politicians and economists have long argued that the current progressive system is too complicated, and discourages incentive. Liberals counter that while the current system is indeed confusing and complex, it is fair. The argument is that those with higher incomes should pay more. According to economist Rudolph G. Penner of The American Enterprise Institute the concept of progressivity is "deeply engrained in the American concept of fairness."[1]

One suggested reform that has been around for years, and appears to be gaining momentum, is the idea of a flat-rate income tax to replace the current twelve step table that runs from 12 percent to 50 percent. In its simplest form the flat-rate proposal would tax **all** income at a designated percentage. The concept itself is certainly simple and easy to understand, but in practice questions (which will be discussed later) arise. Most "flat-rate" plans would allow for an exemption of income up to a certain level to avoid too heavy a burden on the poor.

President Reagan and some members of the cabinet (notably Treasury Secretary Donald Regan) have expressed an interest in pursuing a tax reform package which would include some form of a flat-rate tax. This paper will explore both the case for and against such a policy change, as well as the overall effect on the distribution of income.

THE CASE FOR

The existing system is both complex and contradictory. A flat-rate tax would greatly simplify the tax code and eliminate the need for practically all of the existing forms. Even critics of a flat-rate tax will usually not argue on this point. Indeed this is probably the most often cited advantage of such a change. In addition, by simplifying the tax code, there would cease to be a need for the complex tax decision-making that now frequently occurs. There would simply be no tax advantages allowed for certain types of investments, since practically all exemptions and credits would be eliminated. Proponents argue that this would eliminate criticism that the wealthy are not paying their share.

Those favoring such a change also believe that billions of dollars of income that is now not taxed would become taxable, thus increasing federal revenues. This would occur through the elimination of exemptions and credits, as well as the inclusion of currently non-taxable income such as municipal bonds, some interest and dividends, and certain investment income.

THE CASE AGAINST

Opponents of a flat-rate argue that such a plan (regardless of its specific provisions) would involve a huge shift in the tax burden away from the wealthy to the middle class and the poor. Their point appears valid. Table 1 presents a break-down of the tax liability for twenty-two different income levels under four different plans. Column one (1) represents the adjusted gross income. column two (2) shows the average estimated tax liability for each income under the existing tax code. Column three (3) shows the income tax liability if adjusted gross income were taxed at a flat-rate (.155132). The calculated percentage represents the rate required to raise the same amount of tax revenue as raised by the existing tax code (Column 2). As the table shows, those making less than about $30,000 would pay more in taxes, while those making more would pay

TABLE 1

Selected Income and Tax Liability

(1) $ Adjusted Gross Income	(2) $ Income Tax Existing Progressive Policy	(3) $ Income Tax Straight Flat Rate All Income	(4) $ Income Tax Flat Rate on Income Above $6,000	(5) $ Income Tax Flat Rate on Income Above $10,000
4,494	165	697	-0-	-0-
5,461	284	847	-0-	-0-
6,500	433	1,008	119	-0-
7,501	528	1,164	358	-0-
8,508	628	1,320	598	-0-
9,496	767	1,473	834	-0-
10,488	925	1,627	1,070	181
11,494	1,079	1,783	1,310	554
12,494	1,239	1,938	1,549	925
13,495	1,408	2,094	1,787	1,297
14,484	1,558	2,247	2,023	1,664
17,430	2,078	2,704	2,726	2,757
22,436	2,948	3,481	3,920	4,614
27,384	3,941	4,248	5,100	6,450
34,347	5,610	5,328	6,760	9,034
44,188	8,404	6,855	9,107	12,685
59,029	13,463	9,157	12,646	18,192
85,772	23,531	13,306	19,024	28,114
132,107	43,878	20,494	30,074	45,306
282,395	113,151	43,809	65,915	101,069
667,612	298,169	103,568	157,782	243,999
2,086,564	999,944	323,693	496,176	770,483

Data Source: U.S. Department of Treasury, Internal Revenue Service. 1980 Statistics of Income Individual Income Tax Returns, Publication Number 79(9-82), p. 36.

less. As income goes up the difference between what is paid currently and what would be paid under a flat-rate plan becomes even more pronounced. Before those people making more than $30,000 jump on the flat-rate bandwagon, it must be pointed out that the comparison between these two columns is for illustration only. None of the flat-rate plans under consideration in Washington, nor none proposed by even the most die-hard flat-rate proponents, would implement the percentage on all income. As the table shows, there would indeed be a tremendous increase in the tax-burden for lower income groups. As an example, a family whose income was $7,501 would see their income taxes go from $528 to $1,164, an increase of 120 percent. By contrast, a family with income of $59,029 would enjoy a cut in taxes from $13,463 to $9,157, a decrease of 32 percent. Almost unanimously politicians and economists view such a shift as socially unacceptable and politically unworkable. As a result, most plans would allow for an exemption of some income. Just how much income would be exempted from taxes varies from one plan to another. The objective is to avoid too heavy a burden on the poor.

For this analysis, two such plans were used: $6,000 and $10,000. Columns four (4) and five (5) show the income tax liability if the first $6,000 and the first $10,000 of income were exempted from taxes. By allowing an exemption of some income, there is a sharp increase in the tax rate required to raise the same revenue as that raised under the current system. The impact on the tax burden for these two plans is dramatic.

Under the $6,000 exemption (Column 4), the tax burden is lighter for those making less than about $8,600 and those making more than about $55,000. Those making between $10,000 and $50,000 would clearly pay more in income taxes under such a plan.

The $10,000 exemption (Column 5) would lighten the tax burden for those making less than about $14,000 and more than about $140,000. This plan would increase taxes for all but the lower income and the most wealthy.

Other flat-rate proposals have been made to address this shifting of the tax burden. One sponsored by Senator Dan Quayle, (Republican, Indiana) would apply an 18 percent rate on income from $17,500 to $50,000 and a rate of 25 percent on income about $50,000.[2] A plan devised by Senator Bill Bradley (Democrat, New Jersey) and Representative Richard A. Gephardt (Democrat, Missouri) would lower the tax rate for most individuals to 14 percent after excluding the first $4,600 of income plus a $1,500 exemption per dependent. The maximum rate would be reduced from its current 50 percent to 28 percent.[3] Such tiered plans are designed to maintain some degree of progressivity in the tax code and they succeed to some degree. Yet, the clear result of **any** flat-rate plan would be that the vast majority of taxpayers would pay more and the very wealthy would pay far less. This shift in the tax burden becomes even more pronounced as protection is given to the poor.

OTHER QUESTIONS

There are other points that one should consider in attempting to evaluate the pros and cons of a flat-rate income tax. Consider:

1. How is one to define income? Most plans would include income not currently taxed such as municipal securities and some farm income. But what about Social Security benefits? What about Capital Gains? How would these plans treat such employee fringe benefits as employer paid insurance, tickets to athletic events, the reimbursement for non-business trips, and company owned automobiles? Would the "rollover" on the sale of a house be eliminated? If so, the profit on the sale of one's house would not be exempted when buying a new home, and would be taxable.

2. What would be the impact on investment? No empirical research has yet adequately answered this question. The most obvious effect would be on housing and construction. The elimination of the tax-benefits of home ownership could have devastating effects on the construction industry, as well as other related industries. Also, what would happen to business and employment in industries such as oil and gas exploration, and heavy manufacturing where investment tax incentives currently exist?

3. How would such plans affect charitable contributions? No one can say what percentage of charitable contributions are made by individuals because of the tax breaks involved. Jack Moskowitz, a vice-president with United Way, has warned of vigorous opposition to any tax plan which does not allow for the deduction of charitable contributions.[4]

4. Replacing the current income tax system with a flat-rate plan would eliminate the only tax which is progressive. Social Security taxes, gasoline taxes, and state sales taxes are regressive and tend to place a heavier burden on the middle and lower income groups. (Economists disagree on which income groups carry the burden of property tax. An informative analysis is *Who Pays the Property Tax,* by Henry J. Aaron, published by The Brookings Institute.)

5. What would be the impact on the cities? Currently income from municipal securities is not taxable. Removal of this tax break for investors could result in dramatic losses in municipal revenue. This would increase the probability for increases in property and sales taxes to offset this lost revenue.

CONCLUSION

It seems clear that the flat-rate tax policy raises as many, if not more, questions than it answers. The major argument for such a plan is to simplify the jungle of existing tax law. Certainly that is a worthwhile objective. However, any such plan must deal with the points raised earlier, most dramatic of which is the shift in the tax burden from the upper income to the middle income. A study by the Joint Economic Committee concluded that such a change would result in tax increases for those in the $10,000 to $50,000 income range, and decreases for those with incomes above $50,000.[5] As Joseph J. Minarik, deputy assistant director of the Congressional Budget Office's tax analysis division, points out "there is simply no way to fine tune these effects out of the system, there are only two dials to turn--the rate and the amount of low income relief--and they afford little flexibility."[6]

Has the time come for a flat-rate personal income tax? How one answers this question probably depends on one's income level, as well as his or her definition of what is fair.

Reviewing the data presented in Table 1 will give one an idea of what impact such a policy would have on his federal income tax.

Attempting to define what is meant by a fair tax is more difficult and would have to be done by each individual. If one feels that a simplified tax policy is needed and that a fair method is to tax all income at the same rate, then the answer is yes. However, if one's concept of fairness includes a belief that those with higher incomes should pay at a higher rate than the average taxpayer, the answer is no.

NOTES

1. Crickmer, Barry. "The Flat-Rate Tax: What's Ahead.", *Nations Business,* August, 1982, pp. 22-23.
2. Cowan, Edward, "Flat Income Tax Gaining Advocates.", *New York Times,* 25 May, 1982, p. 16.
3. U. S. Department of the Treasury, Internal Revenue Service. *1980 Statistics of Income Individual Income Tax Returns.* Publication No. 79 (9-82)
4. Wildstrom, Stephen H. "The Flat-Rate Tax: An Old Idea With New Appeal." *Business Week,* 19 July, 1982, pp. 130-131.
5. Ibid.
6. Ibid.

UNDERSTANDING THE CONSUMER PRICE INDEX

Henry Van Geem, Assistant Professor of Business Administration,
Midwestern State University
Robert L. Taylor, Associate Professor of Business Administration,
Midwestern State University

INTRODUCTION

Index numbers probably represent the most common business and economic data coming to the attention of the public. The subjects of the rising cost of living and the declining purchasing power of money are discussed almost daily by news sources.

Basically an index number measures how much a variable changes over time. An index number is calculated by computing the ratio of the current value to a base period value. Then the resulting number is multiplied by 100 to express the index as a percentage but with the percentage sign omitted. The final value is the percentage relative. It should be noted that the index number for the base year is always 100. As an example, if a "cost of living" index for 1982 is quoted as 108.6 and 1980 is the base year (1980 = 100) the meaning is that the cost of living in 1982 is 108.6 percent of the cost of living for 1980. Stated differently, this means that the cost of living for 1982 is 8.6 percent higher than the cost in 1980.

Most of the published indexes are price indexes. The Consumer Price Index and the Producer Price Index are two of the more important indexes in current use in the United States. In this paper, only the Consumer Price Index will be discussed.

The Consumer Price Index (CPI) was originated in 1913 under the demand for wage increases to meet rising costs of living.[1] It has been published regularly since 1921 with a few major revisions.

At one time the full title of the Consumer Price Index was "Index of Change in Prices of Goods and Services Purchased by City Wage-Earner and Clerical-Worker Families to Maintain Their Level of Living." This title indicates that the index measured the average change in the prices of a fixed "market basket" of commodities and services purchased by families of urban wage earners and salaried clerks.

In January 1978, the Bureau of Labor Statistics began publishing CPIs for two groups of the population. The old index has been maintained and is now titled CPI-W which applies to purchases by urban wage earners and clerical workers and covers about 50 percent of the population. The new index is titled CPI-U which covers the purchases by all urban consumers and includes about 80 percent of the noninstitutional civilian population. The CPI-U includes, in addition to wage earners and clerical workers, groups which historically have been excluded from CPI coverage such as: professional, managerial, and technical workers, the self employed, short-term workers, the unemployed, and retirees and others not in the labor force.[2] Most of the time when news services make reference to changes in prices, they are referring to changes reflected through the CPI-U.

CONSTRUCTION OF THE CONSUMER PRICE INDEX

The retail prices which make up the CPI are divided into seven major groups: food and beverages, housing, apparel and upkeep, transportation, medical care, entertainment, and other goods and services. The index includes about 400 items that people buy for day-to-day living. Prices are collected from about 18,000 tenants, 18,000 housing units, and 24,000 retail establishments in 85 urban areas across the United States. All taxes directly associated with the purchase or use of items are included in the index.[3]

The Consumer Price Index is computed monthly. Prices are obtained by personal visits of the Bureau's

trained representatives from a sample of retail stores and service establishments. To assure that quality and quantity do not vary over time, the Bureau has formulated detailed specifications for each item.[4]

For each item, the prices reported are combined with appropriate weights to ascertain average price changes for a city. Thus for a city, such factors as size, climate, population density, and income level are taken into consideration. The price changes for the various cities are combined to obtain figures for the United States.

From time to time the Bureau of Labor Statistics conducts an extensive consumer expenditure survey to determine what items should be included in the CPI and what items should be dropped. The list of items in the Index is changed to include new products like synthetic fibers, between-meal snacks, and television sets, and to drop obsolete products such as buggy whips. The survey is conducted also to determine what weights should be placed on the diverse group of products consumed. For instance, in the 1920's a small proportion of the income of consumers was spent on higher education. Now the typical family spends a sizable proportion of its income on the education of its children. The weights used in calculating the CPI are based on studies of actual expenditures of urban consumers. To help keep the CPI meaningful, they try to hold constant the quantities and qualities of the items in the "market basket" so that between consecutive pricing periods, the index measures only the effect of price change on the cost of living of these families.

The base period for the CPI has been changed from time to time. During the 1960s, the average of 1957-59 was used as a base period. During the 1970s, the base period was 1967. No doubt, the base period will be changed again in the future since the base period has been revised approximately every ten years. Usually a base period is chosen from a past time period which may be considered as relatively "normal". This would be a period free of an abnormality such as war, severe depression, or hyperinflation.

The CPI is not just one index. Instead, it includes a large number of groups, subgroups, and selected items. This allows one to see which items have had the largest price increase. Also, there are separate indexes for a number of large cities. Separate indexes are also published by size of the city, by region of the country, and for local areas. It should be mentioned that area indexes do not measure differences in the level of prices among cities. They measure the average change in prices for each area since the base period.

HOUSING ADJUSTMENT

Effective January 1983, the Bureau of Labor Statistics will change the way in which homeownership costs are measured in the CPI. This change is brought about because the index is so strongly affected by changes in interest rates and a good deal of criticism on this component has been heard.

The present CPI homeownership component includes the month-to-month changes in prices of five expenditures of owning a home. Property taxes, insurance, and maintenance and repairs represent the average expenditures by all people living in their own homes during the CPI base period. The other two expenditures - house prices and mortgage interest costs - are based on the small groups of people (roughly six percent of the total) who actually purchased a house in the base period. The prices used for houses and mortgage interest are current prices which may rise or fall each month. Basically, in the construction of the index, the assumption is made that the consumer rebuys his house and refinances the mortgage each month.[5] To adjust for this, a new measure of rental equivalence will be used to represent the cost of the shelter consumed by the homeowner. Information will be collected on rents for housing units that are similar to those that are owned. The change in the rent will represent the change in the costs that the homeowner would have to pay to live in a home like the one he owns. That is, the rent equivalent will replace house prices and mortgage interest rates as a measure of home ownership costs.

Homeownership costs currently make up about 25 percent of the present CPI. In an experimental rental equivalence measure produced by the Bureau of Labor Statistics, home ownership accounted for only about 14 percent. It is not known whether the new measure will produce higher or lower inflation figures.[6]

INTERPRETING THE CONSUMER PRICE INDEX

Table 1 was copied from the September issue of *CPI Detailed Report* published by the Bureau of Labor Statistics. A perusal of Table 1 shows that the base period is 1967 (1967 = 100). Also note that in September 1982, the CPI for all items combined was 293.3. This means the market basket of goods and services had increased by 193.3 percent since 1967. Medical care went up the most (236 percent), and apparel and upkeep went up the least (94.9 percent).

TABLE 1

Consumer Price Index for All Urban Consumers: U.S. city average, by expenditure category and commodity and service group

(1967 = 100)

Group	Relative importance, December 1981	Unadjusted indexes		Unadjusted percent change to Sept. 1982 from—		Seasonally adjusted percent change from—		
		Aug. 1982	Sept. 1982	Sept. 1981	Aug. 1982	June to July	July to Aug.	Aug. to Sept.
	Expenditure category							
All items	100.000	292.8	293.3	5.0	0.2	0.6	0.3	0.2
All items(1957-59 = 100)	-	340.6	341.1	-	-	-	-	-
Food and beverages	17.535	279.9	280.1	3.5	.1	.0	-.3	.5
Food	16.577	287.4	287.6	3.5	.1	-.1	-.3	.5
Food at home	11.343	280.8	280.6	2.7	-.1	-.4	-.6	.5
Cereals and bakery products [1]	1.487	284.8	284.6	3.8	-.1	.2	.2	-.1
Meats, poultry, fish, and eggs	3.686	265.4	267.8	3.9	.9	.0	-1.0	1.3
Dairy products [1]	1.518	247.5	247.0	1.1	-.2	.5	.0	-.2
Fruits and vegetables	1.669	291.4	284.1	.9	-2.5	-2.8	-2.4	-.1
Sugar and sweets [1]	.431	370.1	371.2	2.7	.3	.7	.2	.3
Fats and oils [1]	.317	258.3	258.4	-3.8	.0	-.5	-.4	.0
Nonalcoholic beverages	1.234	423.8	424.2	2.5	.1	-.5	-.5	.4
Other prepared foods	1.001	269.9	269.9	4.2	.0	.2	.8	.2
Food away from home	5.235	308.7	309.8	5.1	.4	.6	.5	.6
Alcoholic beverages	.958	210.1	210.1	3.8	.0	.6	.5	.0
Housing	46.043	320.1	319.7	5.3	-.1	.5	.4	-.2
Shelter	31.928	344.2	342.6	4.8	-.5	.5	.4	-.5
Rent, residential [1]	5.097	226.0	226.9	7.1	.4	1.0	.5	.4
Other rental costs	.750	333.9	343.0	11.3	2.7	.6	1.3	2.8
Homeownership	26.081	385.9	383.0	4.1	-.8	.4	.4	-.7
Home purchase [1]	9.576	287.9	286.8	4.5	-.4	.7	.1	-.4
Financing, taxes, and insurance [1]	12.947	527.3	519.9	3.6	-1.4	.5	.6	-1.4
Maintenance and repairs	3.558	335.9	338.4	5.2	.7	-.5	.7	.7
Maintenance and repair services	2.777	368.5	372.5	5.7	1.1	-.7	.9	1.1
Maintenance and repair commodities [1]	.781	258.8	257.7	3.6	-.4	.2	.0	-.4
Fuel and other utilities	6.882	356.3	359.5	8.6	.9	.5	.8	.9
Fuels	5.071	454.0	458.5	8.5	1.0	.4	.9	1.1
Fuel oil, coal, and bottled gas [1]	1.387	659.9	662.8	-1.6	.4	.5	.0	.4
Gas (piped) and electricity	3.683	404.4	409.2	12.3	1.2	.3	1.2	1.3
Other utilities and public services [1]	1.811	202.4	203.6	8.6	.6	.5	.5	.6
Household furnishings and operation	7.233	233.4	234.2	4.3	.3	.4	-.2	.0
Housefurnishings	3.833	193.3	194.3	3.4	.5	.4	-.4	.0
Housekeeping supplies [1]	1.442	288.7	289.2	5.8	.2	.7	.1	.2
Housekeeping services [1]	1.957	312.9	313.4	5.1	.2	.3	.1	.2
Apparel and upkeep	4.617	191.8	194.9	2.2	1.6	.5	.4	.2
Apparel commodities	3.952	180.8	184.1	1.5	1.8	.4	.3	.1
Men's and boys' apparel	1.253	183.7	186.5	3.0	1.5	.7	.4	-.1
Women's and girls' apparel	1.435	159.2	163.6	.4	2.8	.1	.8	-.1
Infants' and toddlers' apparel	.100	272.4	276.8	3.9	1.6	1.0	.3	1.2
Footwear	.610	204.4	206.2	1.9	.9	.7	-1.0	.1
Other apparel commodities [1]	.554	210.8	212.6	-.3	.9	-.1	.5	.9
Apparel services	.665	277.4	279.2	6.6	.6	1.0	.5	.6
Transportation	19.313	296.2	295.3	3.5	-0.3	1.2	0.3	0.3
Private transportation	18.009	292.4	291.1	3.3	-.4	1.2	.3	.2
New vehicles [2]	3.497	198.7	197.7	3.3	-.5	.5	.5	.2
New cars	3.112	198.7	197.7	3.3	-.5	.5	.5	.2
Used cars	3.297	304.4	304.6	11.7	.1	1.6	.9	1.2
Motor fuel [3]	5.973	398.4	394.2	-4.1	-1.1	1.9	-.1	-.1
Gasoline [4]		398.4	394.2	-4.1	-1.1	2.0	-.1	-.1
Maintenance and repair	1.449	319.2	320.6	7.3	.4	.7	.4	.4
Other private transportation [1]	3.794	260.8	260.0	6.5	-.3	.8	.0	-.3
Other private transportation commodities [1]	.672	214.8	213.9	.6	-.4	-.6	-.7	-.4
Other private transportation services [1]	3.122	275.5	274.7	7.7	-.3	1.1	.1	-.3
Public transportation [1]	1.304	348.1	353.3	7.4	1.5	.5	.3	1.5
Medical care	4.870	333.3	336.0	11.4	.8	1.0	.9	.9
Medical care commodities	.802	208.2	209.9	10.0	.8	.6	.9	.9
Medical care services	4.068	361.0	364.0	11.6	.8	1.1	.9	.9
Professional services [1]	1.920	304.4	305.9	7.6	.5	.5	.5	.5
Other medical care services	2.148	429.4	434.1	15.3	1.1	1.6	1.2	1.2
Entertainment	3.589	237.4	238.3	6.4	.4	.6	.4	.4
Entertainment commodities	2.137	240.5	240.8	5.7	.1	.8	-.1	.1
Entertainment services [1]	1.452	233.5	235.2	7.4	.7	.1	1.2	.7
Other goods and services	4.032	258.3	266.6	9.7	3.2	.7	.4	1.5
Tobacco products [1]	1.041	240.1	246.8	11.3	2.8	.6	.4	2.8
Personal care [1]	1.571	250.6	251.1	6.3	.2	.6	.5	.2
Toilet goods and personal care appliances [1]	.713	249.5	249.1	7.7	-.2	.6	.7	-.2
Personal care services [1]	.858	252.5	253.8	5.1	.5	.7	.3	.5
Personal and educational expenses	1.420	295.8	316.1	12.3	6.9	1.0	.3	1.9
School books and supplies	.179	265.3	280.5	11.3	5.7	.8	.4	3.5
Personal and educational services	1.241	303.1	324.4	12.4	7.0	1.1	.3	1.6

[1] Not seasonally adjusted.

[2] New series; includes direct pricing of new trucks and motorcycles as of September 1982.

[3] New series; includes direct pricing of diesel and gasohol as of September 1981.

[4] Includes direct pricing of gasohol as of September 1981.

NOTE: Index applies to a month as a whole, not to any specific date.

Also of interest is the expenditure pattern of the average urban consumer. Notice under the column headed "Relative Importance, December 1981" that the average urban consumer spends 16.577 percent of his income on food and 46.043 percent of his income on housing. The categories are even broken down further. For instance, the average urban consumer spends 1.487 percent of his income on cereals and bakery products and 3.683 percent of his income on piped gas and electricity.

CONCLUSION

Of the thousands of statistics published by United States government agencies, the Consumer Price Index is probably the most important single statistic. It should be remembered that this Index is calculated to measure the average change in prices of goods and services used by the urban consumer. Limitation may be encountered in trying to apply the index to the very rich, very poor or farm families whose living and spending patterns differ from those of the typical urban consumer. The CPI does not reflect the cost of living of all Americans.[7]

In brief, the CPI serves several major functions. For instance, it allows consumers to determine the degree to which their purchasing power is being eroded by price increases. In that sense, it may be used as a yardstick for revising wages, pensions, and other income payments to keep pace with changes in prices.

In addition to measuring the change in the price of goods and services, the CPI can be used to determine the real income of individuals. As an example, assume the CPI is presently 300 (1967 = 100). Also, assume that the typical consumer earned $8,000 in the base period of 1967 and that his income is now $24,000. Even though his money income tripled from $8,000 to $24,000, the prices the typical consumer pays for goods and services also tripled. So, the typical consumer's standard of living remained the same from 1967 to the present. Price increases have exactly offset his increases in income.

In general, the CPI compares the cost of a market basket of goods and services this month with its cost a month ago, or a year ago or ten years ago. It is used as an economic indicator of the rate of inflation in the United States.[8]

NOTES

1. Chou, Ya-lun. *Statistical Analysis,* (New York: Holt, Rinehart and Winston Inc., 1969), p. 81.
2. Levin, Richard I. *Statistics for Management.* 2nd ed. Englewood Cliffs: Prentice-Hall, Inc., 1981.
3. Mansfield, Edwin. *Statistics for Business and Economics.* New York: W. W. Norton and Co., 1980.
4. Mason, Robert D. *Statistical Techniques in Business and Economics.* 5th ed. Homewood, Illinois: Richard D. Irwin, 1982.
5. Norwood, Janet L. "The Anatomy of Price Change", *Monthly Labor Review,* February, 1981, pp. 58-59.
6. U. S. Department of Labor. *CPI Detailed Report.* (Washington D.C.: Government Printing Office, 1982), p. 81.
7. Wallace, William H. *Measuring Price Changes.* 2nd ed. Federal Reserve Bank of Richmond, 1972.

THE NUCLEAR DEAL BETWEEN BRAZIL AND THE FEDERAL REPUBLIC OF GERMANY

Fred J. Backhaus, Associate Professor of Political Science, Midwestern State University

Twice during the past eight years, two "Big Deals" have seriously strained the U. S. - European alliance: the "Agreement of Cooperation in the Peaceful Use of Nuclear Energy" between Brazil and the Federal Republic of Germany (FRG) of 1975, and the so-called "Pipeline Deal", initiated in 1978 between the USSR and France, Great Britain, Italy and the FRG.

Both agreements are energy resource contracts of substantial complexity, entered into by sovereign states of diverse political, ideological and economical orientations for essentially economic reasons.

A brief summary of the background of the first of these agreements will present the controversial aspects sufficiently in order to address the basic issues and problems which these agreements have aggravated.

By the late 1960s, population increases, urbanization and industrial development had quadrupled Brazil's energy demand. Due to depletion of scanty fossil fuel deposits and the remoteness of rivers capable of supplying hydropower to the industrialized southeastern region of the country, Brazil moved to implement plans toward the development of nuclear power. In 1967, Brazil awarded bids for its first reactor to Westinghouse, who was to supply ANGRA-I, a 600-megawatt plant scheduled to start in 1978. Under this agreement, Westinghouse also contracted to guarantee delivery of the first charge of fuel and two reloadings.

The oil crisis of 1973 led Brazil to restructure her nuclear development program, delegating the responsibility for such program to Empresas Nucleares Brasileiras (Nuclebras).

Beginning 1974, Nuclebras assumed the conduct of subsequent development activities and entered into negotiations with nations who possessed pertinent nuclear energy technologies resulting in a scramble for lucrative contracts between the West Germans and the Americans. At first, Westinghouse seemed to hold the advantage until the Atomic Energy Commission, in mid-1974, changed some long-term fuel guarantees to "conditional" status and returned the deposit payments already made for enriched uranium fuel. The Brazilians considered this decision to be of critical impact upon their nuclear energy development program, and commenced to vigorously pursue negotiations with the West Germans who were capable and willing to sell not only their reactors but also their enrichment and reprocessing technologies. Both enrichment and reprocessing facilities, given certain technical modifications, are capable of producing uranium or plutonium concentrations usable for nuclear explosives. It was this potential which gave rise to a series of contentions between the USA, the FRG and Brazil. In spite of the fact that the Germans sold, and the Brazilians bought, an as-yet commercially unproven uranium enrichment process, the so-called "Dr. Becker - jetnozzle" process. Cynics observed that the Germans sold an enrichment process that does not work to enrich Brazilian uranium. This fact, however, did not mitigate the controversy which took issue with the aspect of the proliferation of nuclear weapons rather than the technologies involved.

Until the enrichment phase became a non-proliferation issue, the contractual arrangements between the FRG and Brazil were considered to be and treated as a strictly commercial venture between the parties which had authorized professionals to negotiate the multitude of complex details without secrecy. On February 12, 1975, the negotiations were concluded. The FRG informed the US Ambassador in Bonn during the latter part of February, and the FRG Ambassador in Washington briefed the Director of the Arms Control and Disarmament Agency (ACDA). After review pursuant to Article 103 of the Euratom Treaty, The European

Commission stated on June 5, 1975, that it had no objection to the projected exports, and the bilateral agreement was officially signed on June 27, 1975.

However, after notification in February, a delegation from the ACDA and the U. S. State Department had traveled to Bonn in April, in order to present a number of objections to the agreement which can be summarized as follows:

1. A small enrichment plant of the type in question is commercially unproven, impractical, expensive and irrelevant to the establishment of a nuclear electric power industry;

2. The U. S., U. K., France and Urenco (an enrichment venture between the FRG, U. K. and the Nether- have heretofore refused to sell its process in order to avoid the proliferation of such sensitive technology;

3. Any enrichment technology and plant is not a simple object of commerce but an object involving issues of global security;

4. Reprocessing facilities have no proven commercial application nor produced any economic advantage. Their sole purpose is to provide plutonium for nuclear explosives. They constitute the most objectionable aspect of the venture; and

5. Brazil is not a subscriber to the Non-proliferation Treaty and her socio-political condition reveals no guarantee for long-term stability.

In response, the FRG maintained that:

1. The agreement has been structured with the strictest international safeguards presently in effect. All nuclear information, equipment and materials transfers have been placed under the regulations and supervision of the international Atomic Energy Agency (IAEA) and its standard safeguards system. (INFCIRC/66/Rev. 2, including INFCIRC 209, covering enrichment and reprocessing technologies);

2. A hegemony of nuclear-capability-nations can no longer be maintained. Dissemination of technology changes, affecting political and economic power, mandates compliance with Article 4 of Non-proliferation Treaty which provides that subscribers facilitate "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy with due . . . consideration for the needs of the developing areas of the world"; and

3. Brazil is a strong and growing industrial nation with the need and capability of developing a nuclear energy establishment which can no longer be denied participation in the process of peaceful nuclear development, as long as Brazil is willing to subscribe and adhere to the most stringent safeguards so far established.

The German press labeled the American interventions as unwarranted "Querschusse" -- shots across the bow.

Any attempt to objectively analyze the controversy, if such is at all possible, should begin with a recital of the basic provisions of the IAEA standard safeguard system as applied to the agreement, effective February 24, 1976.

The IAEA Standard Safeguard system provides for the inspection of all applicable facilities and for inventory of material *in situ* as well as in transit. Article 2 covers "peaceful nuclear explosives", and states that nations "undertake that none of the covered items shall be used for the manufacture of any nuclear weapon or to further any other military purpose or for the manufacture of any other explosive device." Article 3, (2) provides that "Any nuclear facility or specified equipment designed, constructed or operated, within a period of twenty years after the communication made to the agency . . . in the state to which relevant technological information has been transferred shall be deemed to be designed, constructed or operated on the basis of or by use of transferred relevant technological information if its design, construction or operation is based on the same or essentially the same physical or chemical process or processes as those originally described to the agency."

Article 7, states that nuclear material substituted for other nuclear material is not exempt, and Article 10, 2, permits transfer of sensitive material to third parties only if those third parties subscribe to the safeguards approved by the agency.

The substance of this safeguards agreement and Brazil's complete commitment to its provisions in letter and in spirit are not in dispute between parties. It conceded that Brazil cannot make a nuclear bomb without detection and repercussions. It is furthermore recognized that the safeguard system is presently the best obtainable; yet, like any contract, it can be violated. However, the potential violability of any contractual agreement cannot constitute a tenable argument against it conclusion in view of and as opposed to the generally accepted position that *pacta sunt servanda.*

Neither the agreement nor its implications have been fully discussed in the German Bundestag, the Brazilian or the U.S. Congress. In addition, none of these legislative bodies has yet established a comprehensive nuclear export policy.
